Claims:

1. An endoscopic surgical instrument for deploying a two part fastener having a male fastener part and a female fastener part, comprising:

a) a flexible tube having a proximal end and a distal end;

b) at least one control cable having a proximal end and a distal end and extending through said tube;

c) an end effector coupled to said distal end of said tube, said end effector including means for holding the male fastener part and the female fastener part in opposed relation;

d) movable fastening means coupled to said distal end of said at least one control cable for moving one of the male fastener part and the female fastener part into locking relation with the other of the male fastener part and the female fastener part; and

e) actuation means coupled to said proximal end of said tube and said proximal end of said at least one cable for moving said movable fastening means.

2. An endoscopic surgical instrument according to claim 1, further comprising:

f) a male fastener part held by said means for holding; and

g) a female fastener part held by said means for holding, said female fastener part having a deformable or frangible portion which allows said female fastener part to be released from said means for holding.

3. An endoscopic surgical instrument according to claim 2, wherein:

said deformable or frangible portion includes a plurality of peripheral tabs.

4. An endoscopic surgical instrument according to claim 2, wherein:

said female fastener part is a circular disk with a central opening, and

said male fastener part is a circular disk with a barbed upstanding portion, said barbed upstanding portion dimensioned to enter said central opening.

5. An endoscopic surgical instrument according to claim 2, wherein:

said female fastener part is a substantially rectangular member with a central opening, and

said male fastener part is a circular disk with a barbed upstanding portion, said barbed upstanding portion dimensioned to enter said central opening.

6. An endoscopic surgical instrument according to claim 2, wherein:

said female fastener part is a substantially rectangular member with a central opening, and

said male fastener part is a substantially rectangular member with a barbed upstanding portion, said barbed upstanding portion dimensioned to enter said central opening.

7. An endoscopic surgical instrument according to claim 1, wherein:

said flexible tube includes a port for an endoscope.

8. An endoscopic surgical instrument according to claim 7, wherein:

said end effector includes an exit port for the endoscope.

9. An endoscopic surgical instrument according to claim 1, wherein:

said end effector has a relatively flexible portion and a relatively non-flexible portion.

10. An endoscopic surgical instrument according to claim 9, wherein:

said non-flexible portion has a tapered first grasping surface.

11. An endoscopic surgical instrument according to claim 10, wherein:

said end effector includes a rotatable grasper having a second grasping surface.

12. An endoscopic surgical instrument according to claim 1, wherein:

said end effector includes means for storing a plurality of male fastener parts, one behind the other.

13. An endoscopic surgical instrument according to claim 12, wherein:

said end effector includes means for storing a plurality of female fastener parts, one on top of the other.

14. An endoscopic surgical instrument according to claim 13, wherein:

said means for storing a plurality of female fastener parts includes a rotatable fastener head.

15. An endoscopic surgical instrument according to claim 14, wherein:

said rotatable fastener head includes shuttle means for moving one of the plurality of female fastener parts away from the plurality of female fastener parts.

16. An endoscopic surgical instrument according to claim 15, wherein:

said rotatable fastener head includes an ejection spring and said shuttles means is for moving one of the plurality of female fastener parts away from the plurality of female fastener parts and over said ejection spring.

17. An endoscopic surgical instrument according to claim 12, wherein:

said means for storing includes biasing means for biasing the male fastener parts towards said movable fastening means.

18. An endoscopic surgical instrument according to claim 17, wherein:

said movable fastening means includes blocking means for blocking biased movement of the male fastener parts when said movable fastening means moves a male fastener part into locking relation with a female fastener part.

19. An endoscopic surgical instrument according to claim 17, wherein:

said means for storing includes releasable means for blocking biased movement of the male fastener parts when said movable fastening means moves a male fastener part into locking relation with a female fastener part.

20. An endoscopic surgical instrument according to claim 19, wherein:

said movable fastening means engages said releasable means for blocking.

21. An endoscopic surgical instrument according to claim 1, further comprising:

f) grasping means for grasping tissue and holding tissue relative to said movable fastening means.

22. An endoscopic surgical instrument according to claim 21, wherein:

said at least one control cable includes a first control cable coupled to said movable fastening means and a second control cable coupled to said grasping means.

23. An endoscopic surgical instrument according to claim 22, wherein:

said actuation means includes fastener actuation means coupled to said first cable and grasper actuation means coupled to said second cable.

24. An endoscopic surgical instrument according to claim 17, wherein:

said movable fastening means includes movable means for holding and releasing a male fastener part.

25. An endoscopic surgical instrument according to claim 24, wherein:

said movable means for holding and releasing includes a sliding member.

26. An endoscopic surgical instrument according to claim 24, wherein:

said movable means for holding and releasing includes a springy arm.

27. An endoscopic surgical instrument according to claim 26, wherein:

said movable means for holding and releasing includes a pair of springy arms.

28. A surgical instrument for deploying a two part fastener having a male fastener part and a female fastener part, comprising:

a) a tube having a proximal end and a distal end;

b) at least one control member having a proximal end and a distal end and extending through said tube;

c) an end effector coupled to said distal end of said tube, said end effector including

i) a stationary part having a proximal end and a distal end, and means for holding one of the male and female fastener parts,

ii) a first rotatable member rotatably coupled to said distal end of said stationary part and having means for holding the other of the male and female fastener parts, said first rotatable member being coupled to said distal end of said at least one control member; and

d) actuation means coupled to said proximal end of said tube and said proximal end of said at least one control member for rotating said first rotatable member from a first open position to a second closed position where said first rotatable member extends substantially proximally from said distal end of said stationary member.

29. A surgical instrument according to claim 28, wherein:

said first rotatable member extends distally away from said stationary member when in said first open position.

30. A surgical instrument according to claim 28, wherein:

said first rotatable member rotates more than 90° from said open position to said closed position.

31. A surgical instrument according to claim 28, further comprising:

e) a second control member having a proximal end and a distal end and extending through said tube, wherein

said end effector includes firing means for pushing the male fastener part into the female fastener part when said first rotatable member is in said closed position,

said firing means being coupled to said distal end of said second control member,

said actuation means being coupled to said proximal end of said second control member for activating said firing means.

32. A surgical instrument according to claim 28, further comprising:

e) a male fastener part held by one of said means for holding; and

f) a female fastener part held by the other of said means for holding, said female fastener part having a deformable or frangible portion which allows said female fastener part to be released from said means for holding.

33. A surgical instrument according to claim 32, wherein:

said deformable or frangible portion includes a plurality of peripheral tabs.

34. A surgical instrument according to claim 32, wherein:

said female fastener part is a circular disk with a central opening, and

said male fastener part is a circular disk with a barbed upstanding portion, said barbed upstanding portion dimensioned to enter said central opening.

35. A surgical instrument according to claim 32, wherein:

said female fastener part is a substantially rectangular member with a central opening, and

said male fastener part is a circular disk with a barbed upstanding portion, said barbed upstanding portion dimensioned to enter said central opening.

36. A surgical instrument according to claim 32, wherein:

said female fastener part is a substantially rectangular member with a central opening, and

said male fastener part is a substantially rectangular member with a barbed upstanding portion, said barbed upstanding portion dimensioned to enter said central opening.

37. A surgical instrument according to claim 28, wherein:

said tube includes a port for an endoscope.

38. A surgical instrument according to claim 37, wherein:

said end effector includes an exit port for the endoscope.

39. A surgical instrument according to claim 28, wherein:

said end effector has a relatively flexible portion and a relatively non-flexible portion.

40. A surgical instrument according to claim 39, wherein:

said non-flexible portion has a tapered first grasping surface.

41. A surgical instrument according to claim 40, wherein:

said end effector includes a rotatable grasper having a second grasping surface.

42. A surgical instrument according to claim 31, wherein:

said end effector includes means for storing a plurality of male fastener parts, one behind the other.

43. A surgical instrument according to claim 42, wherein:

said end effector includes means for storing a plurality of female fastener parts, one on top of the other.

44. A surgical instrument according to claim 43, wherein:

said means for storing a plurality of female fastener parts is located in said first rotatable member.

45. A surgical instrument according to claim 44, wherein:

said first rotatable member includes shuttle means for moving one of the plurality of female fastener parts away from the plurality of female fastener parts.

46. A surgical instrument according to claim 45, wherein:

said first rotatable member includes an ejection spring and said shuttles means is for moving one of the plurality of female fastener parts away from the plurality of female fastener parts and over said ejection spring.

47. A surgical instrument according to claim 43, wherein:

said means for storing includes biasing means for biasing the male fastener parts toward said firing means.

48. A surgical instrument according to claim 47, wherein:

said firing means includes blocking means for blocking biased movement of the male fastener parts when said firing means moves a male fastener part into locking relation with a female fastener part.

49. A surgical instrument according to claim 47, wherein:

said means for storing includes releasable means for blocking biased movement of the male fastener parts when said firing means moves a male fastener part into locking relation with a female fastener part.

50. A surgical instrument according to claim 49, wherein:

said firing means engages said releasable means for blocking.

51. A surgical instrument according to claim 28, further comprising:

e) grasping means for grasping tissue and holding tissue relative to said stationary part and said first rotatable member.

52. A surgical instrument according to claim 51, wherein:

said at least one control member includes a first control member coupled to said first rotatable member and a second control member coupled to said grasping means.

53. A surgical instrument according to claim 52, wherein:

said actuation means includes fastener actuation means coupled to said first control member and grasper actuation means coupled to said second control member.

54. A surgical instrument according to claim 47, wherein:

said firing means includes movable means for holding and releasing a male fastener part.

55. A surgical instrument according to claim 54, wherein:

said movable means for holding and releasing includes a sliding member.

56. A surgical instrument according to claim 54, wherein:

said movable means for holding and releasing includes a springy arm.

57. An endoscopic surgical instrument according to claim 56, wherein:

said movable means for holding and releasing includes a pair of springy arms.

58. A surgical instrument, comprising:

a) a tube having a proximal end and a distal end;

b) at least one control member having a proximal end and a distal end and extending through said tube;

c) an end effector coupled to said distal end of said tube, said end effector including

i) a stationary part having a proximal end and a distal end,

ii) a first rotatable member rotatably coupled to said distal end of said stationary part, said first rotatable member being coupled to said distal end of said at least one control member, one of said stationary part and said first rotatable member having means for carrying a deployable fastener, and

iii) a gripping means coupled to said at least one control member; and

d) actuation means coupled to said proximal end of said tube and said proximal end of said at least one control member for rotating said first rotatable member from a first open position to a second closed position and for opening and closing said gripping means.

59. A surgical instrument according to claim 58, wherein:

said gripping means is located between said stationary part and said first rotatable member.

60. A surgical instrument according to claim 58, wherein:

where said first rotatable member extends distally away from said stationary member when in said first open position, and where said first rotatable member extends substantially proximally from said distal end of said stationary member when in said second closed position.

61. A surgical instrument according to claim 58, wherein:

said at least one control member includes a first control member coupled to said first rotatable member and a second control member coupled to said gripping means.

62. A surgical instrument according to claim 61, wherein:

said gripping means includes a second rotatable member coupled to said stationary part.

63. A surgical instrument according to claim 62, wherein:

said second rotatable member has a first gripping surface and said stationary part has a second gripping surface.

64. A surgical instrument according to claim 63, wherein:

said second gripping surface is tapered.

65. A surgical instrument according to claim 58, wherein:

said first rotatable member and said second rotatable member rotate about the same axis.

66. A surgical instrument according to claim 58, wherein:

said first rotatable member and said second rotatable member rotate about different axes.

67. A surgical instrument according to claim 61, wherein:

said first control member is coupled to said first rotatable member by a hinged link.

68. A surgical instrument according to claim 58, wherein:

said tube includes a port for an endoscope.

69. A surgical instrument according to claim 68, wherein:

said end effector includes an exit port for the endoscope.

70. A surgical instrument, comprising:

a) a tube having a proximal end and a distal end;

b) at least one control member having a proximal end and a distal end and extending through said tube;

c) an end effector coupled to said distal end of said tube, said end effector including means for holding a deployable fastener having a sharp end and means for ejecting the deployable fastener, said means for ejecting being coupled to said distal end of said at least one control member;

d) a first rotatable member coupled to said distal end of said end effector and coupled to said at least one control cable, said first rotatable member having means for receiving the sharp end of the deployable fastener; and

e) actuation means coupled to said proximal end of said tube and said proximal end of said at least one control member for moving said first rotatable member from a first open position in which said first rotatable member extends away from said end effector to a second closed position in which said means for receiving is aligned with said means for ejecting, said actuation means also for actuating said means for ejecting and including lock-out means for preventing actuation of said means for ejecting when said first rotatable member is not in said second closed position.

71. A surgical instrument according to claim 70, wherein:

said at least one control member includes a first control member coupled to said means for ejecting and a second control member coupled to said first rotatable member.

72. A surgical instrument according to claim 71, wherein:

said actuation means includes first actuation means coupled to said first control member and second actuation means coupled to said second control member.

73. A surgical instrument according to claim 70, wherein:

said lock-out means includes a raised stop.

74. A surgical instrument according to claim 70, wherein:

said lock-out means also prevents said first rotatable member from being opened until said means for ejecting is deactuated.

75. A surgical instrument according to claim 70, wherein:

said actuation means includes a first lever for rotating said first rotatable member and a second lever for actuating said means for ejecting.

76. A surgical instrument according to claim 75, wherein:

said first lever indicates the position of said first rotatable member.

77. A surgical instrument according to claim 75, wherein:

said first lever and said second lever are coupled to each other by engaging teeth.

78. A surgical instrument according to claim 77, wherein:

said actuation means further includes a rotatable radially toothed member,

said second lever is pivotally coupled to said rotatable radially toothed member, and

said first lever has a plurality of radial teeth which engage said rotatable radially toothed member.

79. A surgical instrument according to claim 78, wherein:

said second control member is coupled to said rotatable radially toothed member.

80. A surgical instrument according to claim 79, wherein:

said rotatable radially toothed member has a curved slot,

said actuation means further includes a cross pin residing in said curved slot, and

said second control member is coupled to said crosspin.

81. A surgical instrument according to claim 70, further comprising:

f) a rotatable grasper coupled to said end effector; and

said actuation means further including means for rotating said rotatable grasper.

82. An endoscopic surgical instrument, comprising:

a) a flexible tube having a proximal end and a distal end;

b) at least one control cable having a proximal end and a distal end and extending through said tube;

c) an end effector coupled to said distal end of said tube, said end effector including

i) a stationary part having a proximal end and a distal end, and means for holding one of a male and female fastener part,

ii) a first rotatable member rotatably coupled to said distal end of said stationary part and having means for holding the other of a male and female fastener part, said first rotatable member

being coupled to said distal end of said at least one control member,

iii) a gripping means coupled to said at least one control member, and

iv) movable fastening means coupled to said distal end of said at least one control cable for moving one of said male fastener part and said female fastener part into locking relation with the other of said male fastener part and said female fastener part; and

d) actuation means coupled to said proximal end of said tube and said proximal end of said at least one control member for

i) opening and closing said gripping means,

ii) rotating said first rotatable member from a first open position to a second closed position, and

iii) actuating said movable fastening means, wherein

said actuating means includes lock-out means for preventing actuation of said movable fastening means when said first rotatable member is not in said second closed position.

83. An endoscopic surgical instrument according to claim 82, wherein:

said gripping means is located between said stationary part and said first rotatable member.

84. An endoscopic surgical instrument according to claim 82, wherein:

said first rotatable member extends distally away from said stationary member when in said first open position, and

said first rotatable member extends substantially proximally from said distal end of said stationary member when in said second closed position.

85. An endoscopic surgical instrument according to claim 82, further comprising:

e) a male fastener part held by one of said means for holding; and

f) a female fastener part held by the other of said means for holding, said female fastener part having a deformable or frangible portion which allows said female fastener part to be released from said means for holding.

86. An endoscopic surgical instrument according to claim 85, wherein:

said deformable or frangible portion includes a plurality of peripheral tabs.

87. An endoscopic surgical instrument according to claim 85, wherein:

said female fastener part is a circular disk with a central opening, and

said male fastener part is a circular disk with a barbed upstanding portion, said barbed upstanding portion dimensioned to enter said central opening.

88. An endoscopic surgical instrument according to claim 85, wherein:

said female fastener part is a substantially rectangular member with a central opening, and

said male fastener part is a circular disk with a barbed upstanding portion, said barbed upstanding portion dimensioned to enter said central opening.

89. An endoscopic surgical instrument according to claim 85, wherein:

said female fastener part is a substantially rectangular member with a central opening, and

said male fastener part is a substantially rectangular member with a barbed upstanding portion, said barbed upstanding portion dimensioned to enter said central opening.

90. An endoscopic surgical instrument according to claim 82, wherein:

said flexible tube includes a port for an endoscope.

91. An endoscopic surgical instrument according to claim 90, wherein:

said end effector includes an exit port for the endoscope.

92. An endoscopic surgical instrument according to claim 82, wherein:

said end effector has a relatively flexible portion and a relatively non-flexible portion.

93. An endoscopic surgical instrument according to claim 92, wherein:

said non-flexible portion has a tapered first grasping surface.

94. An endoscopic surgical instrument according to claim 93, wherein:

said grasping means has a second grasping surface.

95. An endoscopic surgical instrument according to claim 82, wherein:

said end effector includes means for storing a plurality of male fastener parts, one behind the other.

96. An endoscopic surgical instrument according to claim 95, wherein:

said end effector includes means for storing a plurality of female fastener parts, one on top of the other.

97. An endoscopic surgical instrument according to claim 96, wherein:

said means for storing a plurality of female fastener parts is located in said first rotatable member.

98. An endoscopic surgical instrument according to claim 97, wherein:

said first rotatable member includes shuttle means for moving one of the plurality of female fastener parts away from the plurality of female fastener parts.

99. An endoscopic surgical instrument according to claim 98, wherein:

said first rotatable member includes an ejection spring and said shuttles means is for moving one of the plurality of female fastener parts away from the plurality of female fastener parts and over said ejection spring.

100. An endoscopic surgical instrument according to claim 95, wherein:

said means for storing includes biasing means for biasing the male fastener parts towards said movable fastening means.

101. An endoscopic surgical instrument according to claim 100, wherein:

said movable fastening means includes blocking means for blocking biased movement of the male fastener parts when said movable fastening means moves a male fastener part into locking relation with a female fastener part.

102. An endoscopic surgical instrument according to claim 100, wherein:

said means for storing includes releasable means for blocking biased movement of the male fastener parts when said movable fastening means moves a male fastener part into locking relation with a female fastener part.

103. An endoscopic surgical instrument according to claim 102, wherein:

said movable fastening means engages said releasable means for blocking.

104. An endoscopic surgical instrument according to claim 100, wherein:

said movable fastening means includes movable means for holding and releasing a male fastener part.

105. An endoscopic surgical instrument according to claim 104, wherein:

said movable means for holding and releasing includes a sliding member.

106. An endoscopic surgical instrument according to claim 104, wherein:

said movable means for holding and releasing includes a springy arm.

107. An endoscopic surgical instrument according to claim 106, wherein:

said movable means for holding and releasing includes a pair of springy arms.

108. A method of performing invagination and fundoplication, comprising:

a) inserting a grasping and fastening instrument through the mouth and throat into the stomach;

b) grasping the fundus of the esophagus with the instrument;

c) invaginating the fundus with the instrument;

d) applying a two part fastener with the instrument to plicate the fundus.

109. A method of performing invagination and fundoplication, comprising:

a) inserting a fastening instrument through the mouth and throat into the stomach;

b) grasping the fundus of the esophagus;

c) invaginating the fundus;

d) applying a two part fastener with the instrument to plicate the fundus.